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EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2612	5

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/501,017	HIEDA, TERUO	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04 December 2003 have been fully considered but they are not persuasive.

2. The Applicant's argues that "Kaji merely discloses that a gain is dropped on the basis of a brightness level, and does not disclose or suggest" the detection of a high-luminance portion that exceeds a predetermined value, generation of a control signal that has a prescribed waveform that is defined in such a way that a suppression is reduced from the sensed high-luminance portion toward a periphery of the detected high-luminance portion and a suppression that is carried out on the basis of the control signal.

3. Initially, the Examiner disagrees, as clearly stated in column 4 (lines 37 – 42), the inputted image signal is compared with a predetermined saturation level by the high brightness detector 21b to detect whether it has high brightness or not and this detection signal is used as a control signal for the variable gain amplifier (21c). When the brightness level reaches the saturation level, the gain of the amplifier (21c) drops, thereby controlling the amplitude of the signal so that is becomes small and at the same time enabling the occurrence of the false color signal to be suppressed.

4. Furthermore, the Examiner would like to establish that luminance and brightness are synonyms and one hundred percent interchangeable. According to Webster's Collegiate Dictionay (10^{th} Edition), **brightness** is defined as "1a: the quality of state of being bright; also: an instance of such a quality or state b: Luminance".

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, 3 – 5, 7, 8, 13, and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Kaji et al.

For the following rejections please refer to figures 6 – 8 and as stated in columns 3 (lines 42 – 62), 4 (lines 30 – 53), and 5 (lines 25 – 54).

8. For **Claims 1 and 5**, Kaji et al. disclose, an image processing apparatus and method of operating thereof, comprising the parts and steps:

a detecting part/step which detects (high brightness detector 22b, as shown in figure 8), in an inputted image signal (the image signal, which is the signal directly output from the sample and hold circuit 8, is input into the LPF 22a and is then entered in the high brightness detector 22b/detecting part/step), a high-luminance portion that exceeds a predetermined value (As stated in column 4, lines 37 – 42, the signal is compared with a predetermined saturation level by the high brightness detector 21b to detect whether it has high brightness or not ...);

a generating part/step which generates (also provided in the high brightness detector 22b/detecting part/step) a control signal (continuing in column 4, lines 37 – 42, ... and this detection signal is used as a control signal for the variable gain amplifier 21c.), which has a prescribed waveform which id defined in such a way that a suppression is reduced from the detected high-luminance portion toward a periphery of the detected high-luminance portion (Again, as stated in column 4, lines 42 – 46, the gain of the variable gain amplifier 21c drops whenever a high-luminance portion is detected; see below for further explanation), in dependence upon the detection made by said detecting part/step (the high brightness detector 22b/detecting/generating part/step generates a control signal dependent upon the detection made by the same);

a separating part/step which separates a color signal from the image signal (sample and hold circuits 9, 10, and 11 separate the color signal R, G, Cy from the image signal, which is the signal directly output from the sample and hold circuit 8); and

a suppression part/step which suppresses (variable gain amplifier 22c) the separated color signal by the control signal (only the separated color signal is input, from switch 18, into the suppression means).

Since the entire dot sequential image signal is entered into the high brightness detector 22b/detecting/generating part/step to determine high brightness areas in the image signal, which are accordingly suppressed by a drop in the gain of the variable gain amplifier 22c/suppressing part/step, a control signal provided to the variable gain amplifier inherently is a prescribed waveform encompassing the entire image signal, which includes the periphery of the high luminance portion.

9. As for **Claims 3 and 7**, Kaji et al. disclose, the apparatus and method of operating thereof according to claim 1/5, wherein the image signal (which is the signal directly output from the sample and hold circuit 8) is a signal of an image captured by image sensing part/step (CCD image sensor 5), and said detecting part/step (high brightness detector 22b) detects a saturated portion of said image sensing means as the high-luminance portion (see column 4, lines 37 – 46).

10. As for **Claims 4 and 8**, Kaji et al. disclose, the apparatus and method of operating thereof according to claim 1/5, wherein the control signal (see column 4, lines 37 – 42) has a waveform for obtaining a suppression characteristic in which gain of the color signal is made zero in the high-luminance portion and suppression is reduced with distance from the high-luminance

portion toward the periphery thereof and is eliminated at a location beyond a predetermined distance from the high-luminance portion.

Kaji et al. teach, as stated in column 4 (lines 42 – 46), that when the brightness level, of portions, of an entered image signal reaches the saturation level (high-luminance portions), the gain of the variable gain amplifier drops , thereby controlling the amplitude of the signal so that it becomes small and at the same time enabling the occurrence of the false color signal to be suppressed. The Examiner acknowledges that Kaji et al. only disclose *small*, however, the Examiner interprets *small* as to mean zero, since, the gain of the variable gain amplifier is made *small* when applied to the saturated high-luminance/high-brightness portions. If the gain of the variable gain amplifier is made *small* and not zero, the disclosure and teaching of Kaji et al. would not, simply because the saturated high-luminance/high-brightness portions are already saturated and adding a gain, even a *small* gain, would not suppress the *false color signal*s as taught by Kaji et al.

In addition, with respect to the claimed limitation: ... suppression is reduced with distance from the high-luminance portion toward the periphery thereof and is eliminated at a location beyond a predetermined distance from the high-luminance portion. First and foremost, Kaji et al. teach that suppression is only applied to saturated high-luminance/ high-brightness portions, which when exceeding a predetermined saturation level are considered saturated, therefore, by assigning a predetermined saturation level, Kaji et al. effectively provides a predetermined distance from the saturated high-luminance/ high-brightness portions in suppression is eliminated. Secondly and finally, Kaji et al. teach, as stated in column 4 (lines 46 – 50), since the threshold level in detection of saturated high-luminance/ high-brightness portions

can be set to a proper value, as the portions of output signal of the CCD approaches saturation, it is also possible to gradually reduce concentration of color little by little. Therefore, Kaji et al. teach the reduction of suppression as distance increases from the saturated high-luminance/ high-brightness portions.

11. As for **Claims 13 and 14**, Kaji et al. disclose, the apparatus and method of operating thereof according to claim 1/5, wherein a two-dimensional (area) image sensor captures an image and outputs the image signal in a dot sequential form (pixel by pixel). Since the entire dot sequential image signal is entered into the high brightness detector 22b/detecting/generating part/step to determine high brightness areas in the image signal, which are accordingly suppressed by a drop in the gain of the variable gain amplifier 22c/suppressing part/step, a control signal provided to the variable gain amplifier inherently is a prescribed waveform encompassing the entire image signal, which includes the periphery of the high luminance portion and, hence, the waveform would naturally encompass a two-dimensional area from the center of the high-luminance portion to the periphery thereof, and the suppression part/step would suppress accordingly.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 9, 11, 12, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al.

For the following rejections please refer to figures 6 – 8 and as stated in columns 3 (lines 42 – 62), 4 (lines 30 – 53), and 5 (lines 25 – 54).

14. For **Claim 9**, Kaji et al. disclose, an image processing apparatus and method of operating thereof, as stated above with respect claims 1 and 5, however, Kaji et al. do not disclose details of the implementation of the disclosed image processing apparatus and method (i.e. Kaji et al. do not disclose the implementation, of the image processing apparatus and method of operating thereof, in hardware, software, or firmware). Therefore, Kaji et al. do not disclose a computer-readable storage medium storing a program for executing the steps of the image processing method with respect to claim 5.

More specifically, Kaji et al. do not disclose a computer-readable storage medium storing a program for executing: detection processing for detecting, in an inputted image signal, a high-luminance portion that exceeds a predetermined value; generation processing for generating a control signal, which has a prescribed waveform which is defined in such a way that a suppression is reduced from the detected high-luminance portion toward a periphery of the detected high-luminance portion, in dependence upon the detection made by said detecting processing; separation processing for separating a color signal from the image signal; and suppression processing for suppressing the separated color signal by the control signal.

Official Notice is taken that both the concepts and the advantages of providing a computer-readable storage medium storing a program for executing the steps of the image processing method with respect to claim 5 are well-known and expected in the art. It would have

been obvious to implement the image processing method of Kaji et al using a computer, software, and memory as means to provide a portable and fully automated image processing system.

15. As for **Claim 11**, with respect to the Official Notice taken above, Kaji et al. disclose, the storage medium according to Claim 9, wherein the image signal (which is the signal directly output from the sample and hold circuit 8) is a signal of an image captured by image sensing part/step (CCD image sensor 5), and said detecting processing (high brightness detector 22b) detects a saturated portion of said image sensing part/step as the high-luminance portion (see column 4, lines 37 – 46).

16. As for **Claim 12**, with respect to the Official Notice taken above, Kaji et al. disclose, the storage medium according to claim 9, wherein the control signal (see column 4, lines 37 – 42) has a waveform for obtaining a suppression characteristic in which gain of the color signal is made zero in the high-luminance portion and suppression is reduced with distance from the high-luminance portion toward the periphery thereof and is eliminated at a location beyond a predetermined distance from the high-luminance portion.

Kaji et al. teach, as stated in column 4 (lines 42 – 46), that when the brightness level, of portions, of an entered image signal reaches the saturation level (high-luminance portions), the gain of the variable gain amplifier drops , thereby controlling the amplitude of the signal so that it becomes small and at the same time enabling the occurrence of the false color signal to be suppressed. The Examiner acknowledges that Kaji et al. only disclose *small*, however, the Examiner interprets *small* as to mean zero, since, the gain of the variable gain amplifier is made *small* when applied to the saturated high-luminance/high-brightness portions. If the gain of the

variable gain amplifier is made *small* and not zero, the disclosure and teaching of Kaji et al. would not, simply because the saturated high-luminance/high-brightness portions are already saturated and adding a gain, even a *small* gain, would not suppress the *false color signal*s as taught by Kaji et al.

In addition, with respect to the claimed limitation: ... suppression is reduced with distance from the high-luminance portion toward the periphery thereof and is eliminated at a location beyond a predetermined distance from the high-luminance portion. First and foremost, Kaji et al. teach that suppression is only applied to saturated high-luminance/ high-brightness portions, which when exceeding a predetermined saturation level are considered saturated, therefore, by assigning a predetermined saturation level, Kaji et al. effectively provides a predetermined distance from the saturated high-luminance/ high-brightness portions in suppression is eliminated. Secondly and finally, Kaji et al. teach, as stated in column 4 (lines 46 – 50), since the threshold level in detection of saturated high-luminance/ high-brightness portions can be set to a proper value, as the portions of output signal of the CCD approaches saturation, it is also possible to gradually reduce concentration of color little by little. Therefore, Kaji et al. teach the reduction of suppression as distance increases from the saturated high-luminance/ high-brightness portions.

17. As for **Claim 15**, with respect to the Official Notice taken above, Kaji et al. disclose, the apparatus and method of operating thereof according to claim 1/5, wherein a two-dimensional (area) image sensor captures an image and outputs the image signal in a dot sequential form (pixel by pixel). Since the entire dot sequential image signal is entered into the high brightness detector 22b/detecting/generating part/step to determine high brightness areas in the image

signal, which are accordingly suppressed by a drop in the gain of the variable gain amplifier 22c/suppressing part/step, a control signal provided to the variable gain amplifier inherently is a prescribed waveform encompassing the entire image signal, which includes the periphery of the high luminance portion and, hence, the waveform would naturally encompass a two-dimensional area from the center of the high-luminance portion to the periphery thereof, and the suppression part/step would suppress accordingly.

18. **Claims 2, 6, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. in view of Hirata et al.

For the following rejections please refer to figures 3 and 6 and as stated in columns 7 (lines 22 – 67), 8, and 9 (lines 1 – 19).

19. As for **Claims 2 and 6**, Kaji et al. disclose, an image processing apparatus and method of operating thereof comprising a detecting part/step, a generating part/step for generating a control signal in dependence upon the detection made by the detection part/step, and a suppression part/step for suppressing a color image signal. Kaki et al. do not disclose the image processing apparatus and method of operating thereof further comprising: first storage part/step which stores an output from said detecting part/step, wherein said generating part/step generates the control signal in dependence upon an output from said first storage part/step; and second storage part/step for storing this control signal, wherein said suppression part/step suppresses the color signal using the control signal read out of said second storage part/step.

Hirata et al. also disclose, as shown in figure 6, an image processing apparatus comprising a detecting part/step (573), a generating part/step (575) for generating a control signal in dependence upon the detection made by the detection part/step, and a suppression

part/step (576) for suppressing a color image signal. Hirata et al. disclose, the image processing apparatus further comprising: first storage part/step (provided by CPU 70; see below for explanation) for storing an output from said detecting part/step (573), wherein said generating part/step (575) generates the control signal (coefficients) in dependence upon an output from said first storage part/step (the CPU 70 outputs to the generating part/step 575); and second storage part/step (RAM 72) for storing this control signal (RAM 72 stores the coefficients), wherein said suppression part/step (576) suppresses the color signal (provided by HVC converter 571) using the control signal read out of said second storage part/step.

Hirata et al. teach, as stated in column 8 (lines 26 – 42), the detecting part/step (573) detects saturation of the image signal based upon a predetermined saturation stored in ROM (71). The results of the detection are sent from the detecting part/step (573) to the CPU 70 (first storage part/step). The CPU 70 (first storage part/step) instructs the generating part/step (575) to generate a control signal (coefficients Kj). Once the control signal (coefficients Kj) is generated, it is sent back to the CPU 70 (first storage part/step) and is then stored in RAM 72 (second storage part/step). The control signal (coefficients Kj) is read out from RAM 72 (second storage part/step) and sent to the suppression part/step (576) to suppress the color signal. The Examiner interprets CPU 70 as the first storage part/step, since it is inherent to all CPUs to have working storage or working memories to store information. Therefore, since the detecting part/step sends its results to the CPU 70, it is in fact sending its results to the first storage part/step. At the time the invention was made, one with ordinary skill in the art would have been motivated to include a first and second storage part/step in the arrangement taught by Hirata et al. in the image processing apparatus of Kaji et al. as a means to include temporary storage locations so as to

provide each of the detecting part/step, generating part/step, and suppressing part/step the opportunity to perform their respective processes on entire image signals rather than a continuous stream of partial image signals. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to include a first and second storage parts/steps in the arrangement taught by Hirata et al. in the image processing apparatus of Kaji et al.

20. As for **Claim 10**, with respect to the Official Notice taken above, Kaji et al. disclose, a computer-readable storage medium storing a program for executing detection processing, generation processing for generating a control signal in dependence upon the detection made by the detection processing, and suppression processing for suppressing a color image signal. Kaki et al. do not disclose the computer-readable storage medium further storing: a program for executing processing for storing the detected high-luminance portion, wherein said generation processing generates the control signal in dependence upon the stored high-luminance portion; and a program for executing processing for storing this control signal, wherein said suppression processing suppresses the color signal upon reading out the stored control signal.

Hirata et al. also disclose, as shown in figure 6, a computer-readable storage medium storing a program for executing detection processing (573), generation processing (575) for generating a control signal in dependence upon the detection made by the detection processing, and suppression processing (576) for suppressing a color image signal. Hirata et al. disclose, the computer-readable storage medium further storing: a program for executing processing for storing (provided by CPU 70; see below for explanation) the detected high-luminance portion, wherein said generation processing (575) generates the control signal (coefficients) in

dependence upon the stored high-luminance portion (the CPU 70 outputs to the generating step 575); and a program for executing processing for storing (RAM 72) this control signal (RAM 72 stores the coefficients), wherein said suppression step (576) suppresses the color signal (provided by HVC converter 571) upon reading out the stored control signal.

Hirata et al. teach, as stated in column 8 (lines 26 – 42), the detection program (573) detects saturation of the image signal based upon a predetermined saturation stored in ROM (71). The results of the detection program are sent from the detecting program (573) to the CPU 70. The CPU 70 instructs the generation program (575) to generate a control signal (coefficients Kj). Once the control signal (coefficients Kj) is generated, it is sent back to the CPU 70 and is then stored in RAM 72. The control signal (coefficients Kj) is read out from RAM 72 and sent to the suppression program (576) to suppress the color signal. At the time the invention was made, one with ordinary skill in the art would have been motivated to include a program for executing processing for storing the detected high-luminance portion and a program for executing processing for storing the control signal as taught by Hirata et al. in the computer-readable storage medium storing a program of Kaji et al. as a part/step to include temporary storage programs so as to provide each of the detection program, generation program, and suppression program the opportunity to perform their respective processes on entire image signals rather than a continuous stream of partial image signals. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to include a program for executing processing for storing the detected high-luminance portion and a program for executing processing for storing the control signal as taught by Hirata et al. in the computer-readable storage medium storing a program of Kaji et al.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
FEBRUARY 9, 2004

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